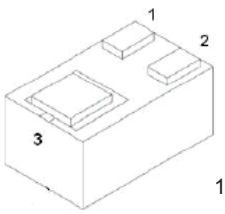
P-Channel MOSFET

2KJ6057DFN

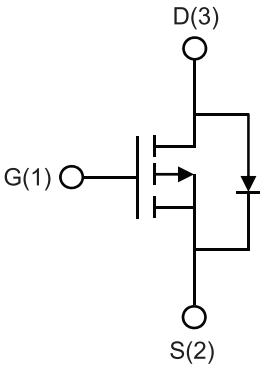
DFN1006-3



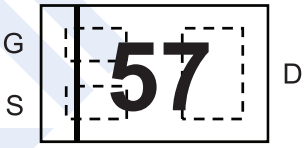
1.GATE
2.SOURCE
3.DRAIN

■ Features

- $V_{DS\ (V)}$ = -20V
- I_D = -2.5A
- $R_{DS(ON)}$ = 97mΩ @ V_{GS} = -4.5V
- $R_{DS(ON)}$ = 125mΩ @ V_{GS} = -2.5V



Circuit Diagram



Marking (Top View)

■ Absolute Maximum Ratings (T_A = 25℃ Unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±12	
Continuous Drain Current	I_D	-2.5	A
Pulsed Drain Current (Note 1)	I_{DM}	-10	
Power Dissipation	P_D	270	mW
Thermal Resistance, Junction- to-Ambient (Note 2)	$R_{\theta JA}$	420	℃/W
Junction Temperature	T_J	150	℃
Junction Storage Temperature Range	T_{stg}	-55 to 150	

Notes:

1. The maximum current rating is package limited.
2. $R_{\theta JA}$ is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins mounted on a 1 inch FR-4 with 2oz. square pad of copper.

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■ Electrical Characteristics (T_A = 25℃ Unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=-250μA, V_{GS}=0V	-20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V, V_{GS}=0V			-1	μA
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±12V			±10	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=-250μA	-0.45		-0.9	V
Static Drain-Source On-Resistance (Note 3)	$R_{DS(ON)}$	V_{GS}=-4.5V, I_D=-1A		97	127	mΩ
		V_{GS}=-2.5V, I_D=- 1A		125	168	
Dynamic Characteristics (Note 4,5)						
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-10V, f=1MHz		248		pF
Output Capacitance	C_{oss}			30		
Reverse Transfer Capacitance	C_{rss}			28		
Total Gate Charge	Q_g	V_{DS}=-10V, I_D=-450mA, V_{GS} = –4.5V		3.0		nC
Gate Source Charge	Q_{gs}			0.2		
Gate Drain Charge	Q_{gd}			0.8		
Switching Characteristics (Note 4,5)						
Turn-On DelayTime	$t_{d(on)}$	V_{DD}=-10V, I_D=-450mA, R_G=6Ω		5		ns
Turn-On Rise Time	t_r			5		
Turn-Off DelayTime	$t_{d(off)}$			53		
Turn-Off Fall Time	t_f			34		
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	I_{SD} = -1A,V_{GS}=0V			-1.1	V

Notes

3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%
4. Essentially independent of operating temperature typical characteristics.
5. Guaranteed by design, not subject to production testing

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■ Typical Characterisitics

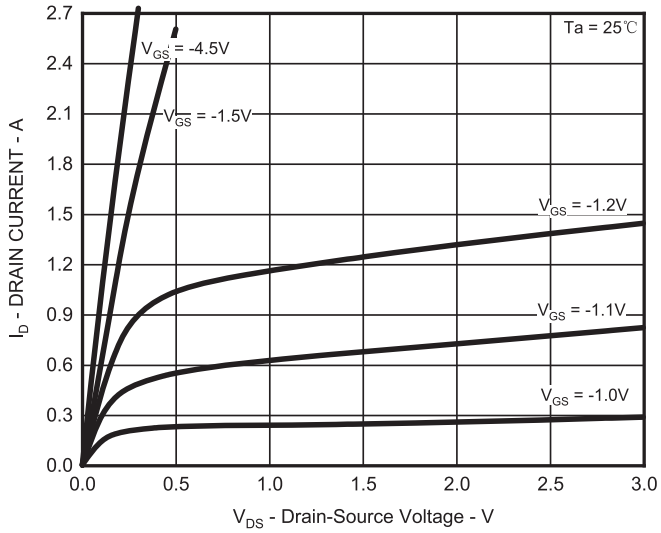

Fig.1 Output Characteristics

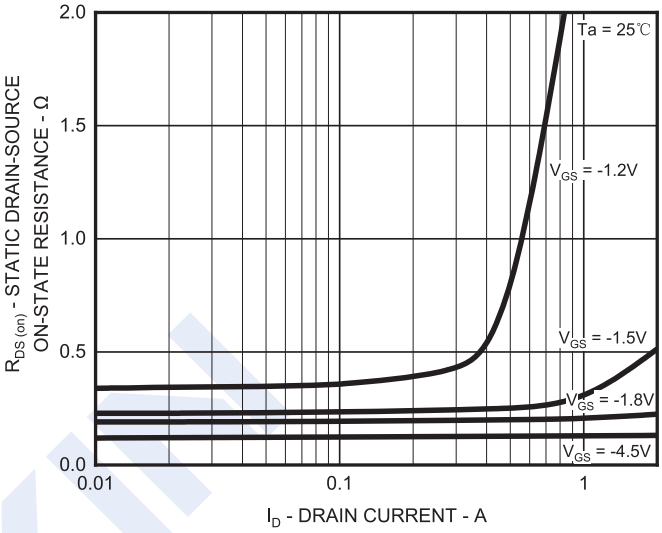

Fig.2 On-Resistance vs. Drain Current (I)

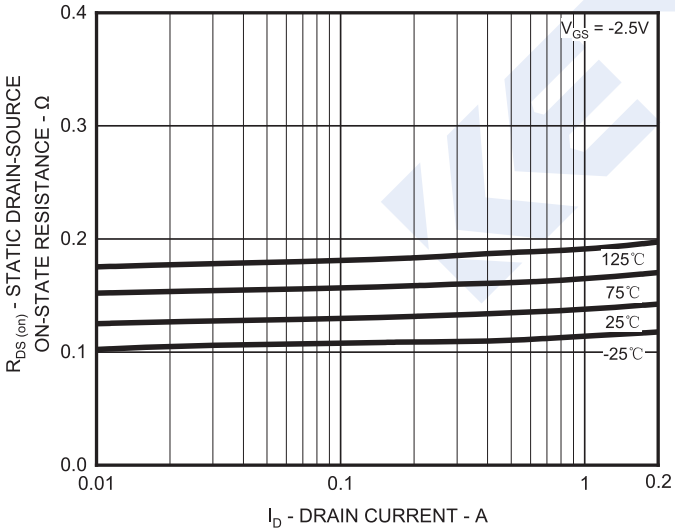

Fig.3 On-Resistance vs. Drain Current (II)

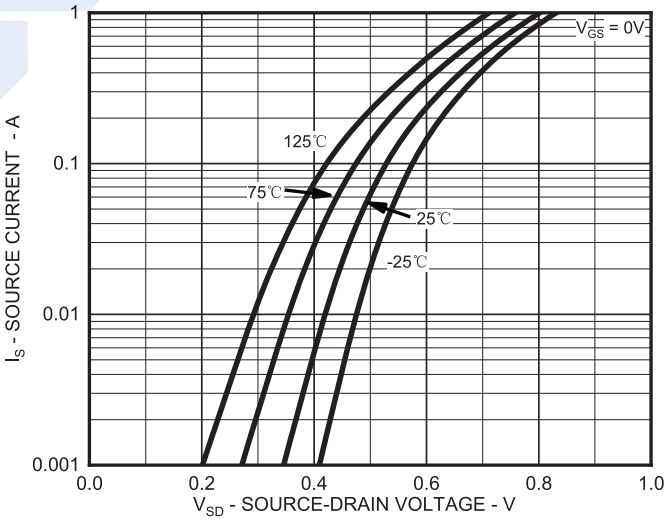

Fig.4 Diode Forward Voltage vs. Current

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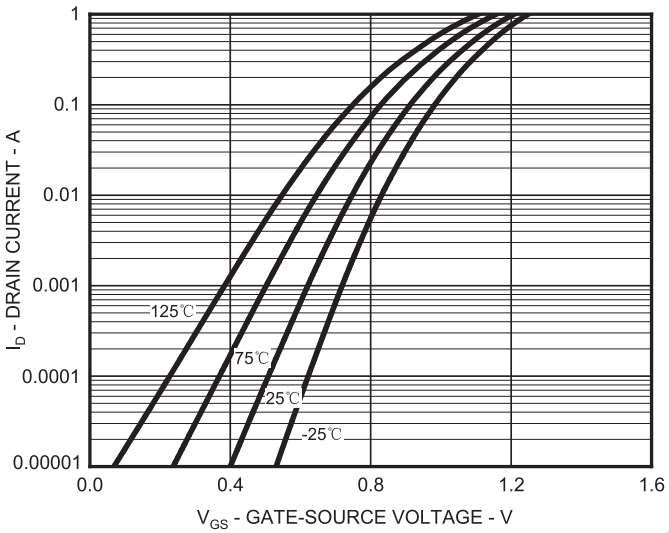

Fig.5 Typical Transfer Characteristic

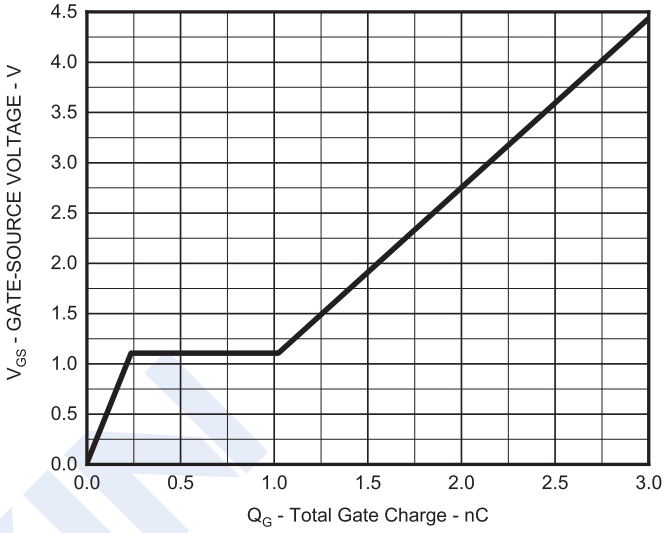

Fig.6 Gate Charge Characteristics

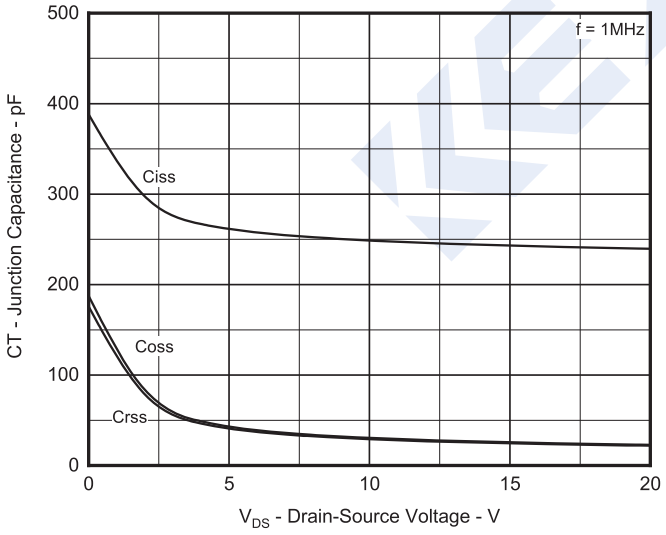

Fig.7 Typical Junction Capacitance

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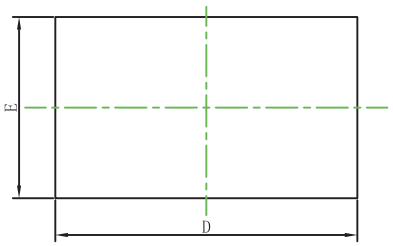
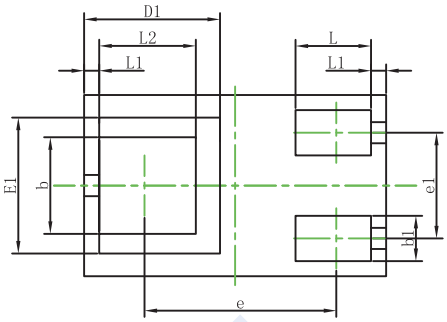
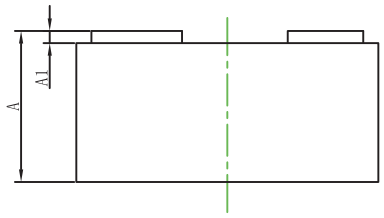
■ DFN1006-3 Package Outline Dimensions



TOP VIEW



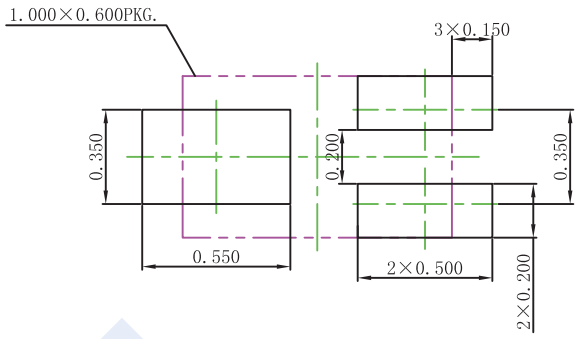
BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.450	0.550	0.018	0.022
A1	0.010	0.100	0.000	0.004
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
D1	0.450REF.		0.018REF.	
E1	0.450REF.		0.018REF.	
b	0.270	0.370	0.011	0.015
b1	0.100	0.200	0.004	0.008
e	0.635REF.		0.025REF.	
e1	0.300	0.400	0.012	0.016
L	0.200	0.300	0.008	0.012
L1	0.050REF.		0.002REF.	
L2	0.270	0.370	0.011	0.015

■ DFN1006-3 Suggested Pad Layout

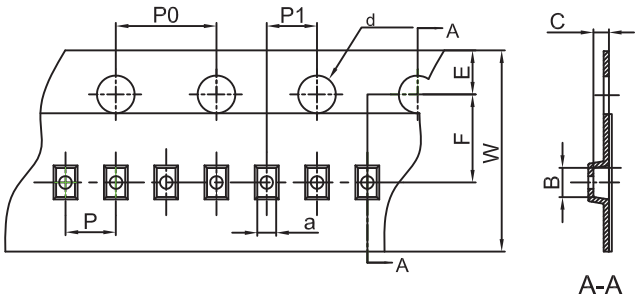


Note:

1.Controlling dimension: in millimeters.
2.General tolerance:±0.050mm.
3.The pad layout is for reference purposes only.

DFN1006-3 Tape and Reel Data

1. DFN1006-3 Embossed Carrier Tape Configuration:

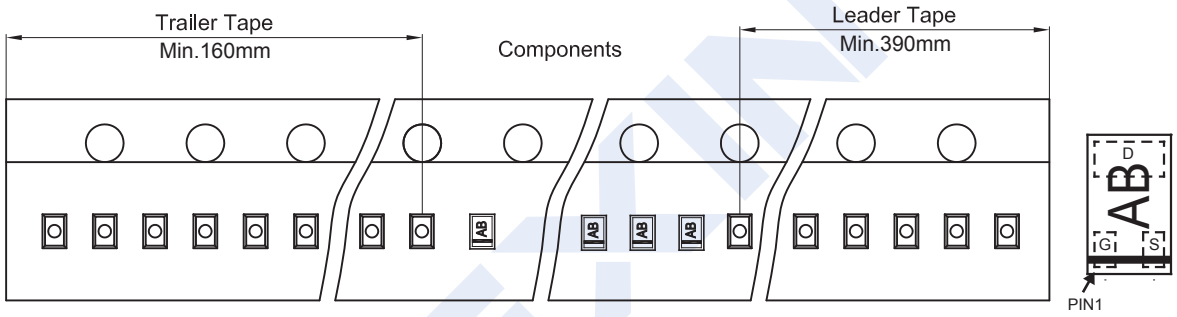


Packaging Description:

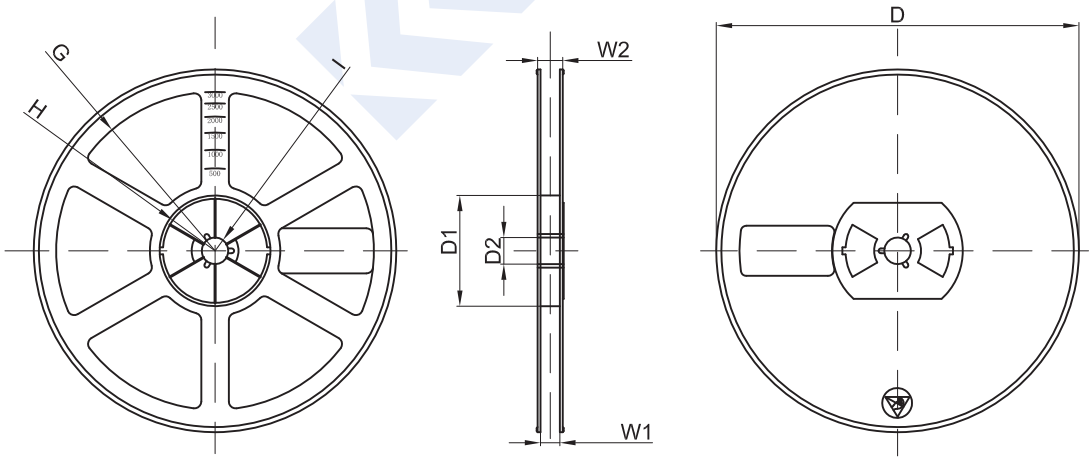
DFN1006-3 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent, These reeled parts in standard option are shipped with 10,000 units per 7″ or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
DFN1006-3	0.66	1.15	0.66	Ø1.50	1.75	3.50	4.00	2.00	2.00	8.00

2. DFN1006-3 Tape Leader and Trailer Configuration:



3. DFN1006-3 Reel Configuration:



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
10000 pcs	7 inch	100,000 pcs	182×182×135	400,000 pcs	386×386×150 *	

* Which comes in different sizes depending on the number of parts shipped.